

# A Study on the Aquatic Coleoptera of Poona (Maharashtra)

BY

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*(With four plates)*

## INTRODUCTION

During the course of studies on respiration of aquatic beetles it became evident that available information on the Indian aquatic beetles is meagre. The group as a whole has received adequate attention from taxonomists and morphologists. However, field observations on this interesting group are few and available literature like, the voluminous work of Sharp (1882) or the more recent contribution of Balfour-Browne (1958) form excellent aids in the laboratory but cannot be profitably used in field.

This paper is an attempt to provide the naturalist or the professional biologist such as a fishery worker or a limnologist not only with the distribution and composition of this group in specific habitats but also to provide characters to identify them in the field.

## TOPOGRAPHY OF THE REGION

Poona (c. 18°31' N., 73°51' E.) situated at the confluence of the rivers Mula and Mutha is about 564 metres above mean sea-level and about 100 kilometres east in a straight line from the western coast. The city lies in the shadow of the western ghats. The average mean rainfall of the region is 500 mm. In addition to the large perennial tanks like Pashan and Katraj which provide a safe sanctuary to these beetles even temporary streams, built-up ponds, disused wells, semi-permanent pools and canals provide protective shelter even if occasionally they go dry.

## METHODS

Collection of specimens was made almost regularly once a fortnight. Weather permitting, the frequency and duration of these visits was increased. Most of the collection was made by handnets. At times a

drift net was prepared and used. Except for the species *Orectochilus discifer* Walker<sup>1</sup> which was collected from Khandala (altitude 900 metres) all other species have been collected from Poona and its surroundings. In the text descriptions are followed by the average measurements of about five specimens taken at random and collected at a particular time. The exact localities and the area of exploration with detailed information on the meteorological conditions have been given earlier (Tonapi 1959, Tonapi & Mulherkar 1963 a).

A simple method was adopted to determine their relative availability. Whenever a specimen was noted at a particular habitat a net of 10 inches diameter was used to sweep the spot three times and attempts were made to capture all the specimens. The number of specimens was then counted. If more than twenty-five specimens were collected during three sweepings, the species was considered to be abundant. If ten specimens were collected the species has been treated as common. If the specimens collected were less than five it has been indicated as uncommon. However, if only a specimen or two were collected at a time and the species was not noticed again then it has been dealt with as rare. It is realised that this system does not truly reflect the relative abundance of a species but the quantitative aspects are not being given importance at the moment.

## SYSTEMATIC LIST

### Family DYTISCIDAE

#### ***Cybister limbatus* Fabr. (Plate I, fig. 1)**

Body obovate with the posterior end slightly pointed. Brown in colour with a greenish tinge. A conspicuously broad yellow band runs along the margins of the pronotum and the elytra. Pronotum and elytra of female impressed with lines of varying lengths which sometimes anastomose. Male pronotum and elytra smooth, with rows of distinct punctures. Underside almost dark brown with yellow patches on the lateral side of the sternal plates. Both the front pairs of legs have tarsal dilations with conspicuous cupules on the forelegs and with spongy hair-like outgrowths on the middle legs.

This is the most common species frequently seen in quarries and ponds.

*Status and Habitat* : Abundant in ponds and quarries.

*Measurements* : Length 43 mm. ; Breadth 20.5 mm.

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<sup>1</sup> A couple of species of this interesting genus are available in the environs of Poona. However, their exact identity has not been determined.

**Cybister confusus Sharp**

Differs from *C. limbatus* in being a little smaller and less stocky. Meso- and metasternal abdominal plates less heavily sclerotised and are translucent. It agrees with the general description of *Cybister limbatus* Fabr. in other respects.

*Status and Habitat* : Common. Pools, quarries and wells.

*Measurements* : Length 38 mm.; Breadth 19 mm.

**Cybister tripunctatus asiaticus Sharp**

Moderate-sized species resembling *Cybister confusus* Sharp in its brownish colour and lateral yellow margins on the elytra. Pronotum and elytra smooth in both sexes, the latter with four rows of distinct punctures. Sternum and the sternal abdominal plates are not heavily sclerotised, some areas almost transparent. Both the front pairs of legs are provided with tarsal dilations, the first with cupules and the second pair with spongy hairs.

The species is very widely distributed in Indo-Malayan region (Vazirani 1952).

*Status and Habitat* : Abundant. Quarries, pools, wells and river banks.

*Measurements* : Length 28 mm. ; Breadth 14 mm.

**Cybister rugulosus Redt. (Plate I, fig. 2)**

Uniform dark brown in colour. Pronotum and elytra smooth in both the sexes. Sternum and sternal abdominal plates, dark brown with heavy sclerotization. Only the first pair of legs is provided with tarsal dilations and cupules.

*Status and Habitat* : Uncommon. Pools, quarries and wells.

*Measurements* : Length 25 mm. ; Breadth 11 mm.

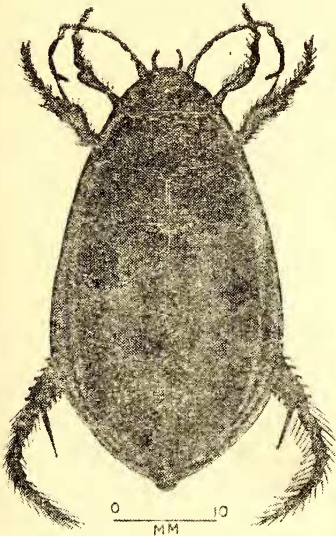
**Hydaticus luczonicus Aube (Plate I, fig. 3)**

This medium-sized beetle has glossy elytra, with the yellow border on the lateral sides stippled with brownish dots. Rest of the elytra dark brown but the pronotum has the anterior, lateral and posterior margins, yellow. The colour pattern on the pronotum and the elytra appears distinctive to the species. In males both the front pairs of legs have tarsal dilations with cupules.

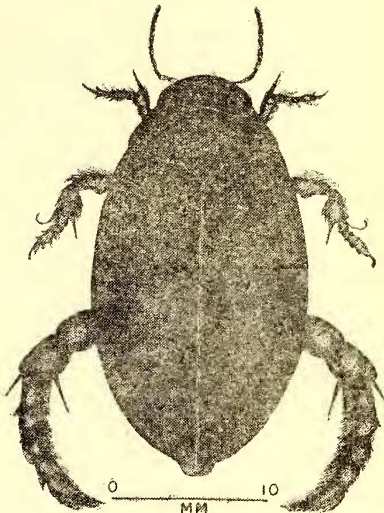
*Status and Habitat* : Common. Quarries, pools and wells.

*Measurements* : Length 14.5 mm. ; Breadth 8.5 mm.

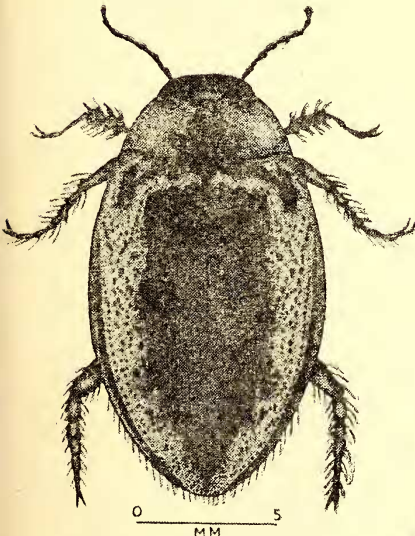
Tonapi: Aquatic coleoptera.



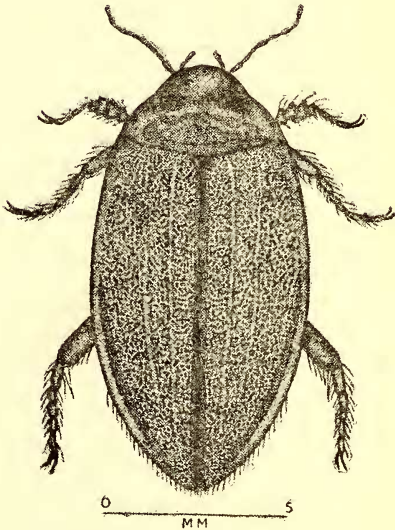
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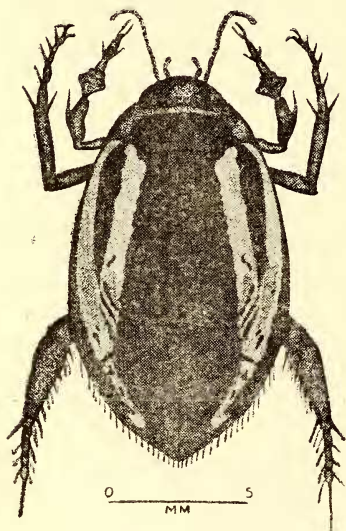
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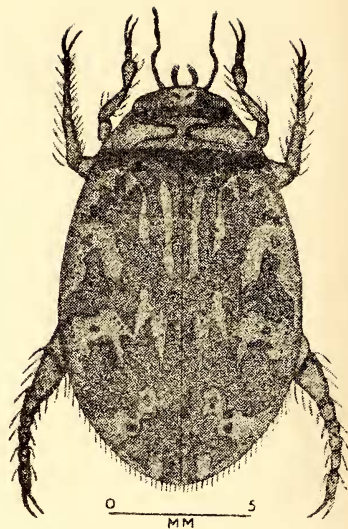
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1. *Cybister limbatus* Fabr.; 2. *Cybister rugulosus* Redt.; 3. *Hydaticus luczonicus* Abeu.;  
4. *Hydaticus fabricii* MacLeay.

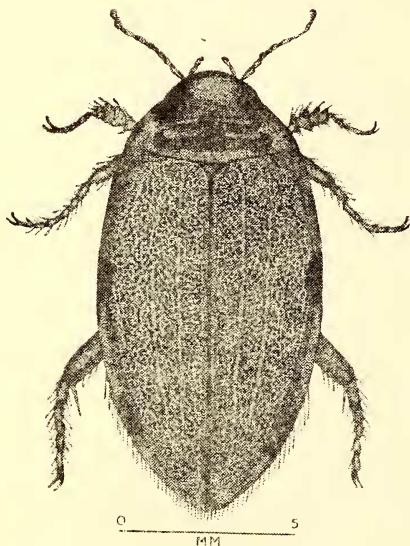
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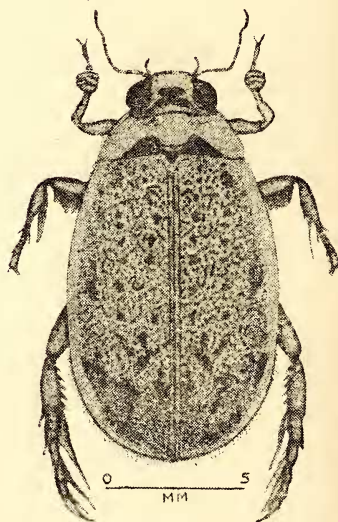
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5. *Hydrocoptus subvittatus* Motsch.; 6. *Sandracottus festivus* Illiger; 7. *Rhantaticus congestus* Klug.; 8. *Eretes sticticus* L.?

**Hydaticus fabricii** MacLeay (Plate I, fig. 4)

Body oval, with pronotum and elytra testaceous but bright. Black spots on the elytra diffused and vermiculate. Elytral edges particularly the posterior and the lateral ones fringed with hairs. Both the front pairs of legs in males have tarsal dilations and cupules.

*Status and Habitat* : Uncommon. Quarries, pools and wells.

*Measurements* : Length 11 mm. ; Breadth 5.5 mm.

**Hydrocoptus subvittatus** Motsch. (Plate II, fig. 5)

Elytra bright with creamy yellow border on the lateral sides. Lateral margins of the pronotum creamy yellow. Basal portion of head capsule brown ; frontal part testaceous. The males have both the front pairs of legs with tarsal dilations and cupules.

Mendis & Fernando (1962) refer to its occurrence in Ceylon and it is apparently very common in the Indian peninsula.

*Status and Habitat* : Abundant. pools, quarries, streams, wells and temporary water courses.

*Measurements* : Length 13 mm. ; Breadth 7.5 mm.

**Sandracottus festivus** Illiger (Plate II, fig. 6)

Broadly oval in general shape. Pronotum and elytra nitid. Elytra yellow with prominent dark black markings which seem to be species specific. Sternum and sternal abdominal plates black and smooth. The posterior lateral edges fringed with few hairs. The males have both the front pairs of legs with tarsal dilations and cupules.

*Status and Habitat* : Uncommon. Pools, quarries, wells and temporary water courses.

*Measurements* : Length 14 mm. ; Breadth 6.5 mm.

**Rhantaticus congestus** Klug. (Plate II, fig. 7)

Oval in general outline with pronotum and elytra bright and glossy. Elytra testaceous with markings similar to those of *Hydaticus fabricii* MacLeay. They however differ in having two dense patches of markings on the lateral margins of elytra. Posterior lateral edges of elytra provided with few fringe hairs. In males both front pairs of legs have tarsal dilations and cupules.

*Status and Habitat* : Uncommon. Pools, quarries, wells and temporary water courses.

*Measurements* : Length 13 mm. ; Breadth 6 mm.

**Eretes sticticus L. (?) (Plate II, fig. 8)**

Oblong oval in shape. Pronotum and elytra bright and lustrous. Elytra with rows of black spots more concentrated on the posterior side. Meso- and metasternum and the sternal abdominal plates feebly sclerotised and hence more or less transparent. Both front pairs of legs have tarsal dilations with cupules.

This species is very agile and takes to flight immediately after leaving water unlike some other aquatic beetles like the Gyrinids (Carthy 1962). It is reported as very common almost all over Ceylon (Mendis & Fernando 1962).

*Status and Habitat* : Common. Pools, quarries and wells.

*Measurements* : Length 13 mm. ; Breadth 6 mm.

**Laccophilus chinensis inefficiens Boh. (Plate III, fig. 9)**

Body ovate, nearly elliptical but narrowed posteriorly. Prothorax very short. Elytra widest near the centre, and are testaceous with black markings. Tarsi of the first two pairs of legs in males enlarged and provided with spongy hairs.

These beetles can hop with agility outside the water. This is the most common species amongst the small-sized beetles. They are found more on the sides of the ponds.

*Status and Habitat* : Abundant. Quarries, pools and river banks.

*Measurements* : Length 4.5 mm. ; Breadth 2 mm.

**Laccophilus parvulus Aube (Plate III, fig. 10)**

This species is a little larger and stouter than the preceding species. General body colour testaceous with very faint black markings on elytra. Both the front pairs of legs in males with spongy hairs on the slightly enlarged tarsal plates.

*Status and Habitat* : Common. Quarries, pools and river banks.

*Measurements* : Length 5 mm. ; Breadth 2.3 mm.

**Laccophilus anticatus Sharp (Plate III, fig. 11)**

Body ovate. Head, thorax and the elytra are pitchy with distinct yellow patches on the latter. Underpart is also pitchy.

A rare species amongst the genus *Laccophilus* and usually found in association with partially submerged floating vegetation on the banks of ponds.

*Status and Habitat* : Rare. Pools and quarries.

*Measurements* : Length 4 mm. ; Breadth 2 mm.